

What is claimed is:

1. A digital base booster (DBB) comprising:

an inputting portion including a plurality of multi-bit registers to respond to input data and first internal data;

5 a data assigner for selecting one set of output data from a plurality of sets of output data of the inputting portion;

10 an arithmetic portion for performing an arithmetic operation on the output data of the data assigner and data stored in the arithmetic portion, compensating for a round-off error of the data output by the arithmetic operation, storing the compensated result and outputting the first internal data; and

15 an output data storing device for storing data processed in the arithmetic portion.

2. The digital base booster as claimed in claim 1, wherein one multi-bit

register of the plurality of multi-bit registers stores the input data and outputs the stored input data in response to a related control signal, and the other multi-bit registers store the first internal data and output the stored first internal data in response to a related control signal.

3. The digital base booster as claimed in claim 1, wherein the data

20 assigner is a multiplexer.

4. The digital base booster as claimed in claim 1, wherein the arithmetic

portion comprises:

25 a first data register for storing second internal data;

a second data register for storing and outputting the output data of the data assigner;

90 a first multiplexer for selecting the output data of the first data register and the output data of the second data register;

an arithmetic data portion for selecting the output data of the data assigner and the second internal data to store and output intermediate data during an arithmetic operation;

5 an arithmetic processor for arithmetically processing the output data of the first multiplexer and data stored in the arithmetic processor, and adding the arithmetically-processed data to the output data of the arithmetic data portion to output the second internal data;

10 an error compensator for compensating for a round-off error for the second internal data which is the output data of the arithmetic processor; and

15 a third data register for storing the output data of the error compensator. -

5. The digital base booster as claimed in claim 4, wherein the arithmetic data portion comprises:

a second multiplexer for selecting the second internal data and the output data of the data assigner;

a fourth data register for storing the output data of the second multiplexer; and

20 a data path controller for controlling transmission of the output data of the fourth data register.

6. The digital base booster as claimed in claim 4, wherein the arithmetic processor comprises:

25 a barrel shifter for performing an arithmetic operation in response to the output data of the first multiplexer;

a first adder for adding the output data of the barrel shifter; and

30 a second adder for adding the output data of the first adder to the output data of the arithmetic data portion.